

```

yiaX2  MNITSNSTTKD--IPRQRWLRIIPPILITCIISYMDRVNIAFAMPGGMDA
prmA    MQ-----KSQPGTRWFRRIIVPILIACIMSFMDRVNISFALPGGMEQ
PE6     MNTASVSVTQSQAI PKLRWLRIVPPILITCIISYMDRVNIAFAMPGGMDD
PK1     MNSST-----N-ATKRWWYIMPIVFITYSLAYLDRANFSFASAAGITE
prmB    MNTSR-----KLPVKRWWYLMPIVFITYSLAYLDRANYGFAAASGIEA
PE1     MNSST-----N-ATKRWWYIMPIVFITYSLAYLDRANFSFASAAGITE
        * . . . . . ** . . . . . * . . . . .

yiaX2  DLGISATMAGLAGGIFFIGYLFLOVPGGKIAVHGS GKKFIGWSLVAWAVI
prmA    DLLMSSQMAGVVS GIFFIGYLFLOVPGGHI AVRGS GKRFI AWSLVAWAVV
PE6     ELGITASMAGLAGGIFFIGYLFLOVPGGKLAVYGN GKKFIGWSLLAWAVI
PK1     DLGITKGISSLLGALFFLG YFF FQIPGAIYAERRSVRKLIFICLILWGAC
prmB    DLGISRGTSLLIGALFFLG YFIFQVPGAIYAVKRSVRKLVFTSLLLWGFC
PE1     DLGITKGISSLLGALFFLG YFF FQIPGAIYAERRSVRKLIFICLILWGAC
        * . . . . . ** . . . . . * . . . . .

yiaX2  SVLT-GLITNQYQLLALRFL LGVAEGGMLPVVLT MISNWFPDAERGRANA
prmA    SVAT-GFVTHQYQLLILRFALGVSEGGMLPVVLT MVSNWFPPEKELGRANA
PE6     SVLT-GLVTNQYQLLFLRFALGRFRSGMLRWVLT MISNWFPDKERGRANA
PK1     ASLDRDGAQYSRAGRAIRFILGVVEAAVMPAMLIYISNWFTKRSERSRANT
prmB    AA-ATGLISNIPALMVIRFVLGVVEAAVMPAMLIYISNWFTRQERSRANT
PE1     ASLDRDGAQYSSAGWRSVLFSAVVEAAVMPAMLIYISNWFTKRSERSRANT
        . . . . . * . . . . . * . . . . .

yiaX2  IVIMFVPIAGIITAPLSGWIIITVLDWRWLFII EGLLSLVVLVLWAYTTIYD
prmA    FVMMFAPLGGMITAPVSGWIIIALLDWRWLFII EGLLSVVVLAVWWLMVSD
PE6     IVIMFVPIAGILTAPLSGWIIITAWDWRMLFLVEGALSLVVMVLWYFTISN
PK1     FLILGNPVTVLWMSVVS GYLIQAFGWREMFIIEGVP AVIWAFCWWVLVKD
prmB    FLVLGNPVTVLWMSIVS GYLINAFGWREMFIIEGVP ALIWAIFWWFIVRD
PE1     FLILGNPVTVLWMSVVS GYLIQSFGWREMFIIEGVP AVLWAF CWWVLVKV
        . . . . . * . . . . . ** . * . . . . ** . * . . . . *

yiaX2  RPQEARWISEAEKRYLVETLAAEQKAIAG-TEVKNASLSAVLSDKTMWQL
prmA    RPEDARWLPAAEREYLLREMARDKAERSKLPPISHAPLQEVFHNPGMLMKL
PE6     RPQEAKRISQA EKDYLIKTLHDEQLLIK G-KTVRNASLRRVLGDKIMWK-
PK1     KPSQVNWLAESEKAALQEQLEREQQGIKPVRNYGEA-----FRSRNVVLL
prmB    KPEQVSWLTETEKQQLASAMAE EQQAIPPMRNV PQA-----LRSRNVVVL
PE1     KPSQVNWLS ENEKAALQAQLESEQQGIKAVRNYGEA-----FRSRNVILL
        . * . . . * . * . . . . * . . . .

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FIG. 1A

yiaX2	IALNFFYQTGIYGYTLWLPTILKELTHS-SMGQVGMLAILPYVGAIAGMF
prmA	VILNFFYQTGDYGYTLWLPTI IKNLTGA-SIGNVGLLTVLPFIATLSGIY
PE6	----FFYQTGIYGYTLWLPTILKGLTNG-NMEQVGMLAILPYIGAI FGML
PK1	CMQYFAWSIGVYGFVLWLPSIIRSGGENMGMVEVGWLSSVPYLAATIAMI
prmB	CLLHALWSIGVYGFMMWMP SILRSAA-SMDIVRVGWLA AVPYLA AIITML
PE1	CMQYFAWSIGVYGFVLWLPSIIRSGGVNMGMVEVGWLSSVPYLAATIAMI
	* ** . . * . * * * * . . *
yiaX2	LFSSLSDRTGKRKLFV-CLPLIGFALCMFLSVALKNQIWLSYAALVGC GF
prmA	VVSYLSDKTGKRRQWV-MISLFCFAACLLASVLLREFVLAAYLALVACGF
PE6	IISTLSDRTGKRKV FV-ALPLACFAICMALS VLLKDHIWWSYAALVGC GV
PK1	VVSWASDKMQNRKLFVWPLLLI AVFAFIGSWAVGANLSWVSYTLLVIAGA
prmB	VISWLSDKTGLRRLFIWPLLLI ASVTFFGSWLLGSYSFWFSYGLLV LAAA
PE1	VVSWASDKMQNRKLFVWPLLLIGGLAFIGSWAVGANHFWASYTLLVIANA
	. * ** . * . . . * . . * * .
yiaX2	FLQSAAGVFWTIPARL FSAEMAGGARGVINALGNLGGFCGPYAVGV LITL
prmA	FLKAATS PFWSIPGRIAPPEAAGSARGVINLGNLGGFCGPWL VGLMIYL
PE6	FTQAAAGVFWTIPPKLFNAEMAGGARGVINALGNLGGFCGPY MVGV LITL
PK1	AMYAPYGPFFAI IPEMLPRNVAGGAMALINSMGALGSFFGSWFVGYLNGT
prmB	CMYAPYGPFFALIPELLPKNVAGISIGLINCCGALGAFAGAWLVGYLNGL
PE1	AMYAPYGPFFAI IPEMLPRNVAGGAMALINSMGALGSFFGSWFVGYLNGT
	. . . * * * . . * * * * * . * * .
yiaX2	YSKDAGVYC-LAISLALAA LMA LLLPAKCDAGAAPVK--TINPHKRTA-
prmA	YGQNAAVVT-LAGSLIIAGIIAALLPTQCDLRPAEARQQNFTPRIHDAK
PE6	FSKDVG VYS-LAVSLASASVLALMLPNRCDQKAGA-----E-
PK1	TGSPSASYIFMGV ALFVS VWLTLIVKPA---NNQKLP---LGAR---HA
prmB	TGGPGASYTFMAIALLVSVGLVFFLKVP---SGNLVTRRLLKGD---AK
PE1	TGSPSASYIFMGV ALFAS VWLTLIVKPA---NNQKLP---IGAR---HA
 *

FIG. 1B

Fermentative Production of 2-KLG

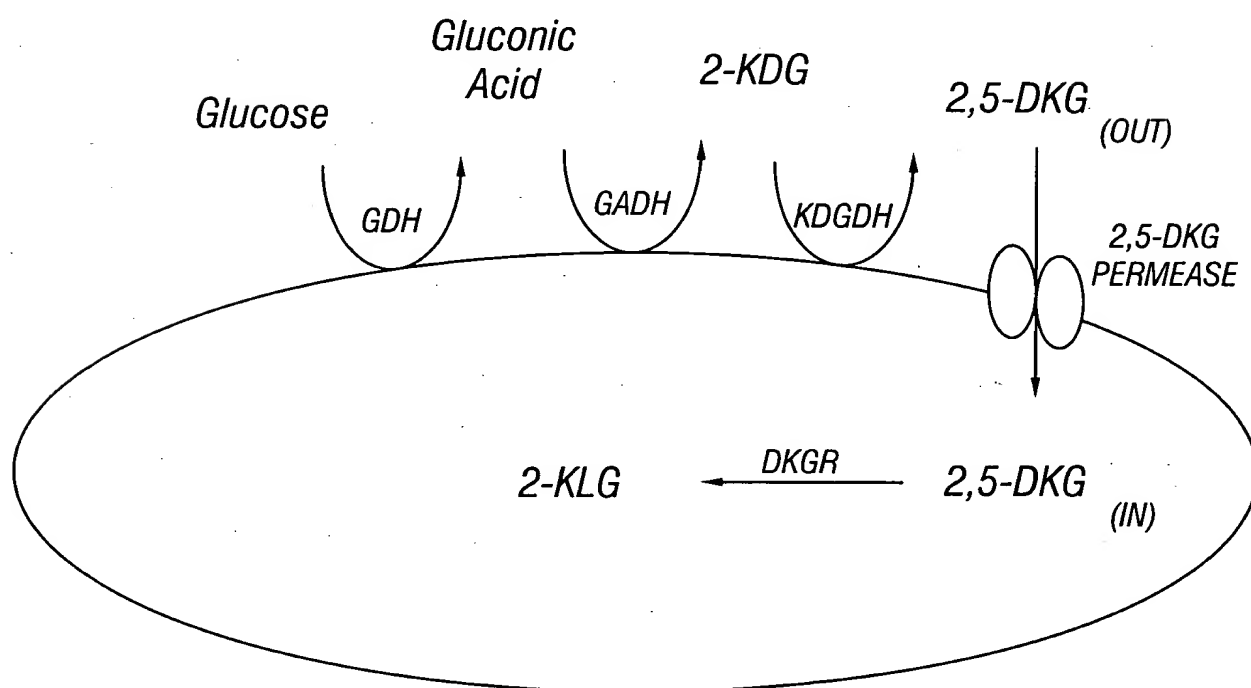


FIG. 2

0092501 0800 10522660

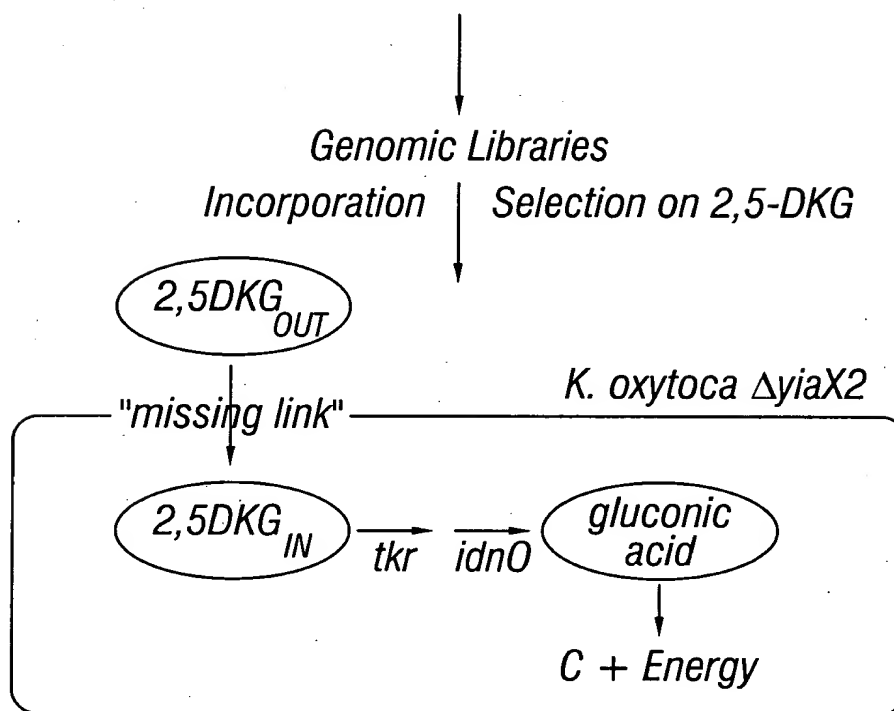


FIG. 3